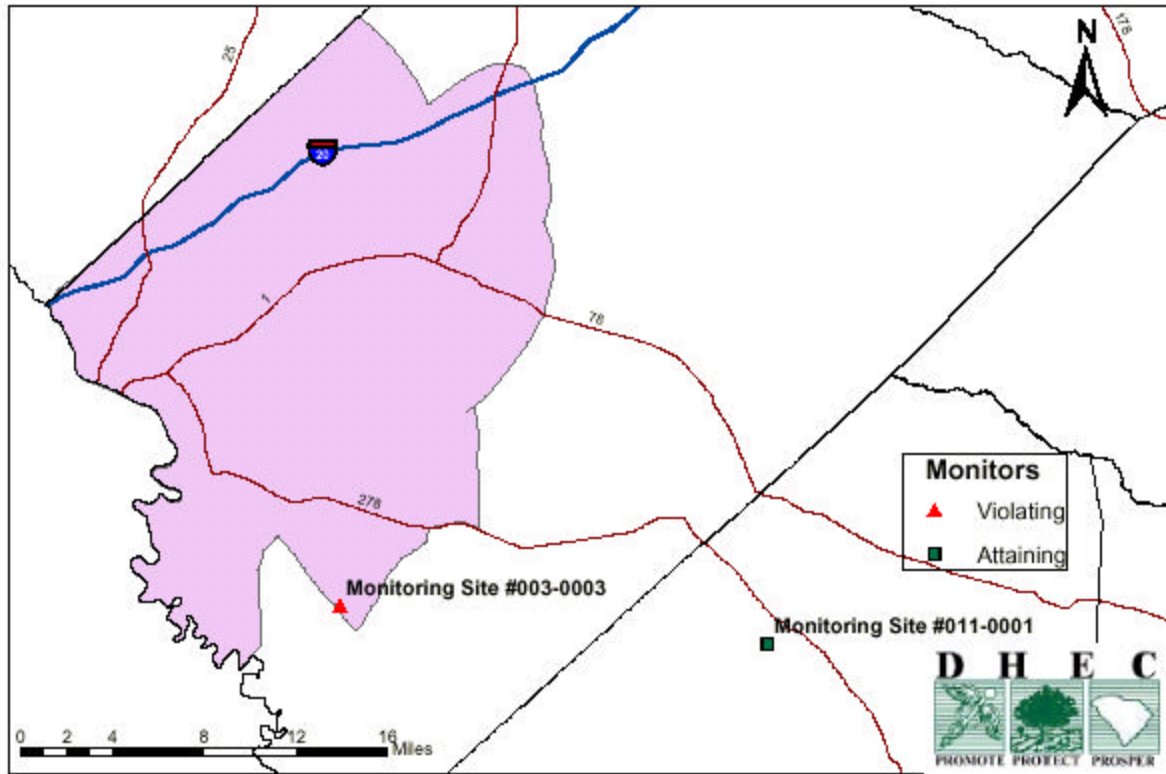


## Aiken Nonattainment Area



**Figure 1: Aiken Nonattainment Area Map**

The South Carolina Department of Health and Environmental Control (Department) recommends that the area encompassed by the boundaries of the Aiken Metropolitan Planning Organization (MPO) and the contiguous area encompassing the monitor site at Jackson Middle School, Aiken County be designated a nonattainment area for violating the 8-hour ozone National Ambient Air Quality Standard (air quality standard) based on 2000 through 2002 monitoring data. The recommended area will be referred to as the Aiken Nonattainment Area throughout the rest of this document.

The Department recommends designation of separate nonattainment areas to address the Augusta - Aiken, Georgia – South Carolina Metropolitan Statistical Area (MSA) and its adjacent counties. The designation of separate nonattainment areas would lead to greater efficiency in the development and implementation of control measures. Designation of the entire MSA and adjacent areas would lead to some neighboring areas having to implement control measures that may not provide any significant emission reductions to help ensure attainment and/or maintenance of the air quality standard in the MSA. The requirements of the State Implementation Plan (SIP) developed for each nonattainment area should be flexible enough to address each area's unique situation.

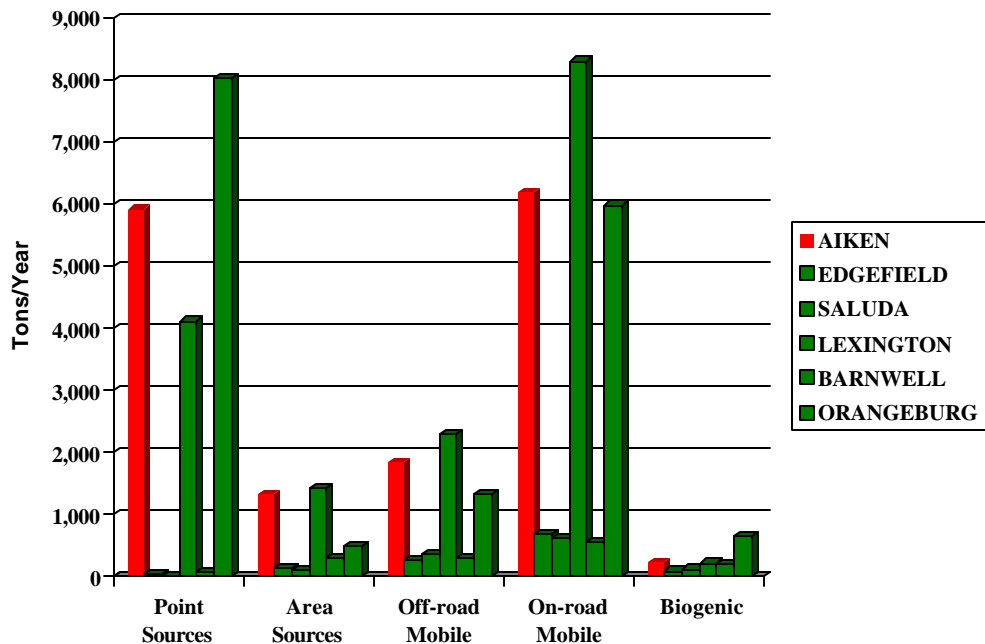
Aiken County is the fourth largest county in the state at 1,073 square miles. The population in the county in 2000 was 142,552 and about 81.3% of the population resides in the recommended boundary. There are 22 NO<sub>x</sub> point sources in the county and 21 of these are in the recommended boundary, accounting for 95.5% of the point source NO<sub>x</sub> emissions. The largest point source of NO<sub>x</sub> in the proposed

boundary is subject to the NO<sub>x</sub> SIP Call and has a 2004 ozone season NO<sub>x</sub> budget of 643 tons. There are 27 VOC point sources in the county and 26 of these are in the recommended boundary, accounting for 98.1% of the point source VOC emissions. The proposed boundary accounts for 68.4% of the 2001 daily vehicle miles traveled and the 2025 projections estimate that 94.02% of the daily vehicle miles traveled will be within this boundary. There is currently one monitor in Aiken County exceeding the 8-hour ozone standard. However, between 2000 and 2002, the Department operated an ozone monitor in eastern Aiken County to assess conditions between Aiken and Columbia, South Carolina. This monitor indicated attainment of the ozone standard and thus supports the recommendation of the proposed boundary. Two additional monitors are located in the South Carolina counties bordering Aiken County, one to the northeast and one to the southeast. Both of these monitors indicate attainment with the 8-hour ozone standard.

The Department is submitting this document to provide detailed information pertaining to the factors which EPA suggested be addressed in support of any nonattainment area designation recommendations.

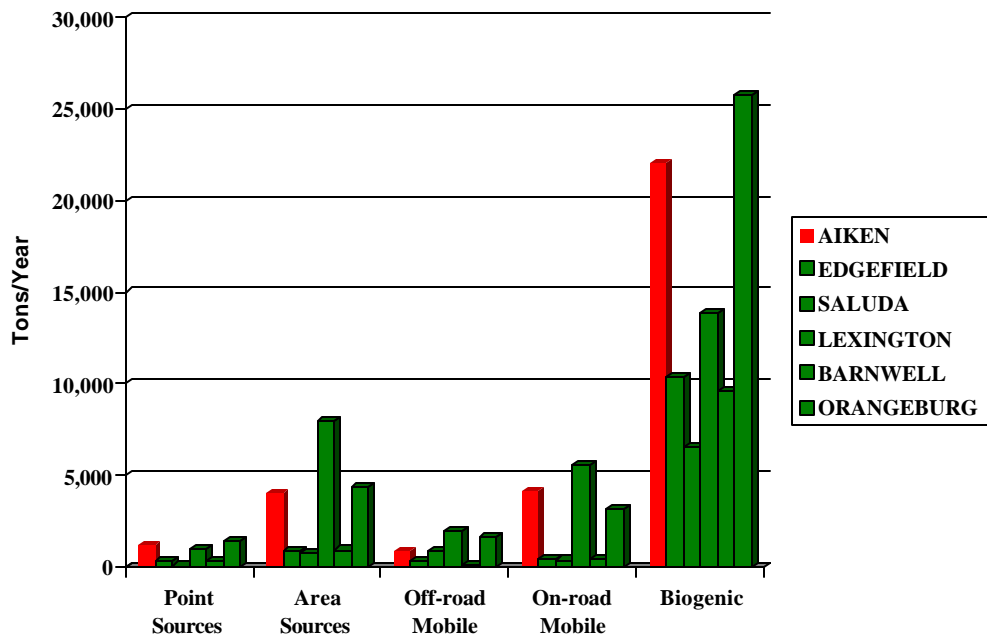
#### A. Emissions and Air Quality in Adjacent Areas (Including Adjacent MSAs)

Figure A-1: NO<sub>x</sub> Sources for Aiken and Adjacent Counties\*



\* Order of bars corresponds with order of counties in legend.

**Figure A-2: VOC Sources for Aiken and Adjacent Counties\***



**\* Order of bars corresponds with order of counties in legend.**

To evaluate the emissions in Aiken County and the adjacent areas, South Carolina utilized the estimated annual 1999 oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC) emissions. The types of NO<sub>x</sub> and VOC emission sources that were evaluated include point, area, biogenic, and on-road and off-road mobile sources. Figures A-1 and A-2 show the percentage of emissions from each source category for Aiken and surrounding South Carolina Counties. Additional emissions inventory information is provided in Section D.

The Department had two ozone-monitoring sites in Aiken County with three years of data; one monitor indicated a violation of the standard while the second demonstrated attainment of the air quality standard. Aiken County is a part of the Augusta – Aiken, Georgia – South Carolina MSA. Air quality information is provided in Section C.

### **B. Population Density and Degree of Urbanization Including Commercial Development (Significant Difference from Surrounding Areas)**

According to the US Census, urban is defined as all territory, population, and housing units in urbanized areas and urban clusters. An urbanized area is defined as a densely settled area that has a census population of at least 50,000, and an urban cluster is defined as a densely settled area that has a census population of 2,500 to 49,999. An urban area is a generic term that refers to both urbanized areas and urban clusters. Rural is defined as all territory, population, and housing units located outside of urbanized areas and urban clusters.

The Aiken Nonattainment Area contains the urbanized areas in Aiken County and the towns of Aiken, Jackson, and New Ellenton. Based on the population of the urbanized portion of Aiken County, the

populations of Jackson and New Ellenton and an assumed population outside of town boundaries, the population of the Aiken Nonattainment Area is estimated to be about 115,894, which is 81.3% of the county population. The land area of the recommended area is estimated to be about 434.9 square miles, based on the rural and urban populations densities for Aiken County. Using the estimated population and land area of the Aiken Nonattainment Area, the population density of the recommended area is calculated to be 266.5 persons per square mile, which is 2 times the county population density.

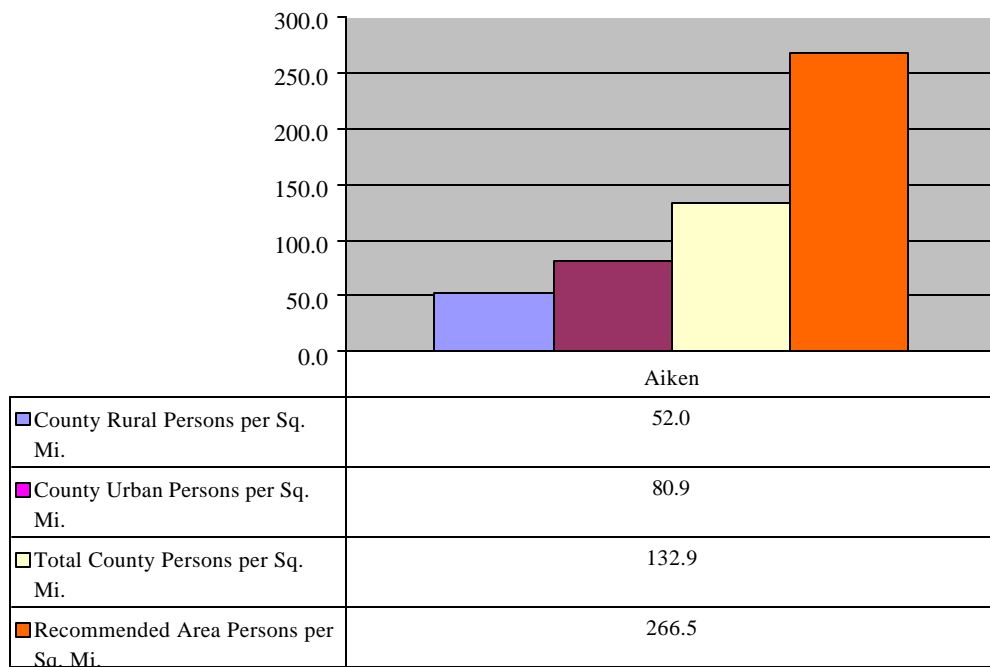
Table B-1 contains population data for both Aiken County and the recommended Aiken Nonattainment Area.

<b>Table B-1: Total Population, Land Area, and Urban/Rural Population, 2000</b>		
	<b>Aiken County</b>	<b>Recommended Area</b>
Population <sup>1</sup>	142,552	115,894
Land Area (Square Miles) <sup>1</sup>	1073	434.9
Persons per Square Mile <sup>1</sup>	132.9	266.5
Urban Population <sup>2</sup>	86,786	Unknown at this time
% Urban Population <sup>2</sup>	60.9%	Unknown at this time
Rural Population <sup>2</sup>	55,766	Unknown at this time
% Rural Population <sup>2</sup>	39.1%	Unknown at this time
* The data for the recommended area is based on assumptions and is only estimates. The actual data may be greater than or less than the data provided.		

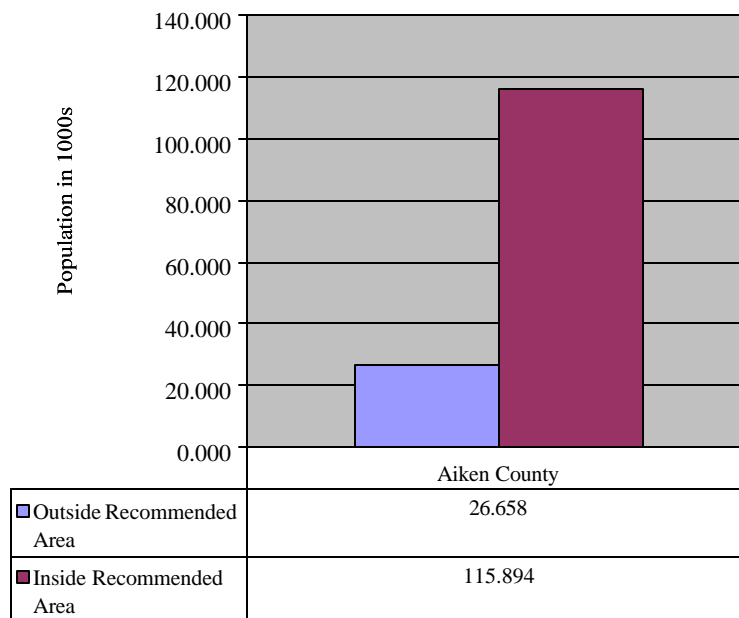
<sup>1</sup> Data provided by US Census:2000. Portions of the data for the recommended area were obtained from the SCDOT.

<sup>2</sup> Data provided by SC Office of Research and Statistics.

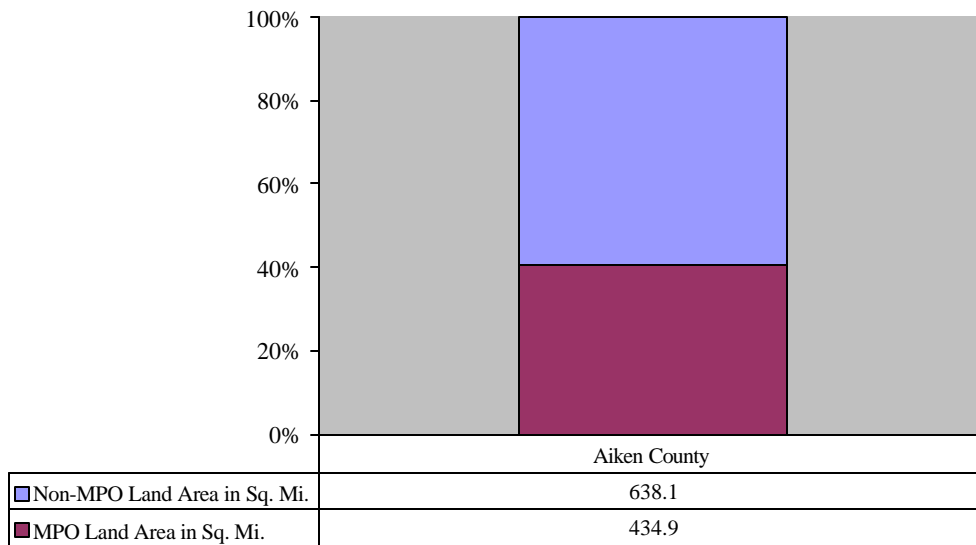
**Figure B-1: Population Density, 2000  
(Persons per Square Mile)**



**Figure B-2: Population Distribution  
Relative to Recommended Area Boundaries, 2000**



**Figure B-3: Land Area Distribution  
According to Recommended Area Boundaries, 2000**



Figures B-1, B-2, and B-3 show the population density distribution, land area distribution, and population distribution, respectively, for Aiken County relative to the Aiken Nonattainment Area.

According to the US Census, manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction. Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included. The retail trade sector comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.

The Aiken Nonattainment Area contains a fair portion of the economic development in Aiken County. Almost 44% of the manufacturing employees in Aiken County work inside the boundary, and 79 of the 82 manufacturing establishments in Aiken County, or 96.3%, are located inside the boundary. A total of 524 retail trade establishments are located in the county and employ 6,853 persons. It is reasonable to assume that the boundary contains a large portion of the retail business, particularly since the metropolitan area of Aiken County is in the boundary.

Tables B-2 and B-3 contain the manufacturing and retail trade data for Aiken County and the Aiken Nonattainment Area.

<b>Table B-2: Manufacturing Employees and Establishments in Aiken County, 2000<sup>3</sup></b>			
	In Recommended Area	In County Boundary	Percent in Recommended Area
Number of Employees	10,004	22,342	44.78%
Number of Establishments	79	82	96.34%

<b>Table B-3: Retail Trade Patterns, 2000<sup>4</sup></b>		
	Number of Employees	Number of Establishments
Aiken County	6,853	524

**Figure B-4:  
Distribution of Manufacturing Employees, 2000**

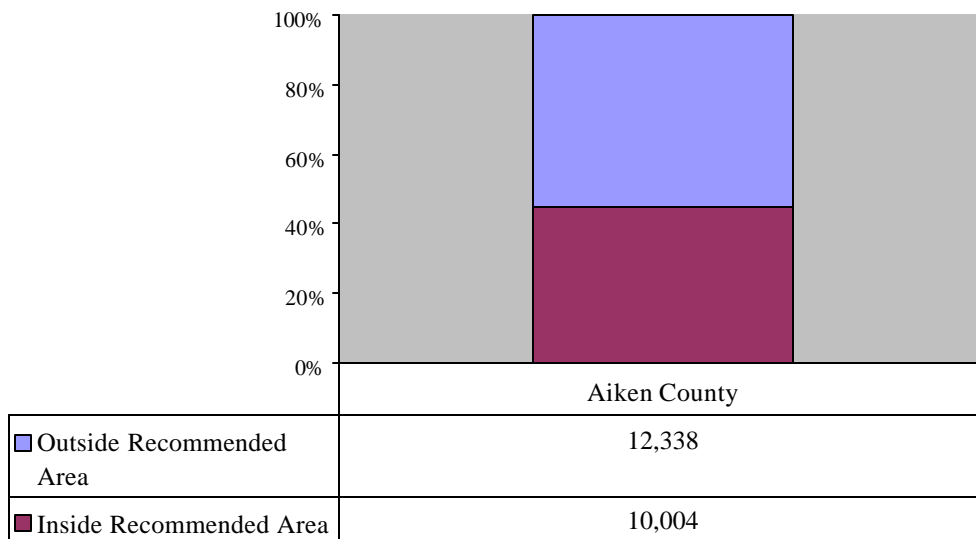


Figure B-4 shows the distribution of manufacturing employees relative to the recommended nonattainment boundaries.

### **C. Monitoring Data Representing Ozone Concentrations in Local Areas and Larger Areas (urban or regional scale)**

The Aiken Nonattainment Area Map (Figure 1) shows the ozone monitoring stations in the Aiken

<sup>3</sup> Data from Bureau of Air Quality file entitled "SC Company File1.xls," based on 2001.

<sup>4</sup> Data provided by US Census: 2000.

Nonattainment Area. Aiken, Barnwell and Edgefield Counties have one ozone-monitoring station in each county. Aiken County did have two monitoring stations during the 2000-2002 time period. The Jackson Middle School (45-003-0003) site is located inside the portion of the Aiken Nonattainment Area boundary and is the only monitor violating the 8-hour ozone standard in that area. Established in 1985, this site is located on Highway 125, and the surrounding area is residential. It sits 91 meters above sea level. According to the South Carolina Department of Transportation (SCDOT), traffic count data for 1993, shows three thousand (3,000) vehicles per day access the road. The monitoring objective for this site is to measure ozone concentrations for source oriented emissions.

The Edgefield County (Trenton 45-037-0001) air monitoring station is located in a rural area. The site was established in 1980 and has continuously run since April of that year. This site is located off of US Highway 25 and is surrounded by agricultural land. It is seated approximately 177 meters above sea level. SCDOT traffic count data for 1991, shows one thousand (1,000) vehicles per day access the road. The monitoring objective for this site is to measure ozone concentrations for upwind background. The monitor indicates attainment of the 8-hour ozone standard.

The Barnwell County (Barnwell CMS 45-011-0001) air monitoring station is located in a rural area. The site was established in 1985 and has continuously run since November of that year. This site is located off of Road S-6-21 and SCDOT traffic count data for 1993, shows three hundred (300) vehicles per day access the road. The site is located in forest setting and is approximately 91 meters above sea level. The monitoring objective for this site is to measure ozone concentrations for source oriented emissions. The monitor indicates attainment of the 8-hour ozone standard.

The second ozone monitoring site in Aiken County (Wagener SCDOT 45-003-0004) was a short-term special study to show the gradient difference between Richland County and Aiken County. This site, located on Washington Road at the SCDOT building, was established in August, 2000, and operated until November, 2002. It was surrounded by agricultural land and sat approximately 138 meters above sea level. SCDOT traffic count data for 2000 shows one hundred (100) vehicles per day access the road. The monitoring objective for this site was to measure the ozone concentrations for general background. The monitor indicated attainment of the 8-hour ozone standard.

Table C-1 presents the 2000 through 2002 8-hour ozone monitoring data for Aiken, Barnwell, and Edgefield Counties. The design value is the annual fourth-highest daily maximum 8-hour ozone concentration, expressed in parts per million (ppm), averaged over three consecutive years. Since the 2002 ozone design value for the Jackson Middle School monitoring site is 0.088ppm, the site is marginally exceeding the 8-hour ozone standard.

<b>Table C-1: Aiken and Surrounding Area Ozone Monitoring Data</b>						
County	Site ID	Site Name	4 <sup>th</sup> Maximum 8-Hour			Design Value
			2000	2001	2002	
Aiken	45-003-0003	Jackson Middle School	0.093	0.081	0.092	0.088
	45-003-0004	Wagener DOT	0.075	0.079	0.089	0.081
Barnwell	45-011-0001	Barnwell CMS	0.090	0.074	0.086	0.083
Edgefield	45-037-0001	Trenton	0.079	0.077	0.094	0.083

Table C-2 contains the previous three years daily maximum ozone concentration above 0.084 ppm. A



period indicates that no exceedance occurred on the same day at that location. For the past three years, Jackson Middle School site has had more exceedances than the other nearby ozone monitoring stations. The design value for Wagener SCDOT, Barnwell CMS, and Trenton ozone monitors have been below the air quality standard.

<b>Table C-2: Jackson Middle School, Wagener DOT, Barnwell CMS, and Trenton Sites</b>				
<b>Date of Exceedance</b>	<b>Aiken Jackson Middle School Daily Maximum 8-hour Average ppm</b>	<b>Aiken Wagener DOT Daily Maximum 8-hour Average ppm</b>	<b>Barnwell Barnwell CMS Daily Maximum 8-hour Average ppm</b>	<b>Edgefield Trenton Daily Maximum 8-hour Average ppm</b>
05/11/2000	0.088	.	0.086	.
06/01/2000	0.104	.	0.093	.
06/02/2000	0.092	.	0.09	0.085
06/03/2000	0.094	.	.	0.087
07/13/2000	0.085	.	.	.
07/18/2000	0.086	.	.	.
07/19/2000	0.097	.	0.099	.
07/21/2000	0.089	.	.	.
07/22/2000	.	.	0.087	.
08/15/2000	0.089	.	.	.
08/17/2000	0.093	.	.	.
08/18/2000	.	.	0.091	.
<b>2000 Total Hits</b>	<b>10</b>	<b>0</b>	<b>6</b>	<b>2</b>
05/17/2001	.	0.089	.	.
05/31/2001	0.104	0.085	0.098	.
07/19/2001	0.091	.	0.089	.
<b>2001 Total Hits</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>0</b>
05/24/2002	.	.	0.09	.
05/25/2002	.	.	0.086	.
06/03/2002	.	0.089	.	0.086
06/10/2002	.	0.089	0.086	.
06/11/2002	.	0.089	.	.
06/13/2002	0.095	0.099	0.089	0.101
07/03/2002	.	.	.	0.086
07/05/2002	0.093	.	.	.
07/08/2002	.	0.085	.	0.095
07/17/2002	0.093	0.091	0.086	0.089
08/10/2002	.	.	.	0.086
09/06/2002	.	.	.	0.094
09/11/2002	0.092	0.092	0.091	0.095
<b>2002 Total Hits</b>	<b>4</b>	<b>7</b>	<b>6</b>	<b>8</b>

#### **D. Location of Emission Sources**

Table D-1 lists the NO<sub>x</sub> point sources that are in operation in Aiken County based on the 1999 NO<sub>x</sub> and VOC emissions inventory iSteps data. The county of Aiken has 22 NO<sub>x</sub> point sources in operation

and 21 of these point sources are located within the nonattainment area. Facilities in Red are within the proposed boundary; facilities in Black are outside the proposed boundary.

Table D-1: Aiken County Point Source NO2 Emissions				
County	Plant Name	Permit Number	Pollutant	Point Source-NO2 (Tons Per Year)
Aiken	Advanced Glassfiber Yarns	0080-0117	NO2	764.29
Aiken	Avondale Mills: Gregg	0080-0061	NO2	62.83
Aiken	Avondale Mills: Horse Creek	0080-0098	NO2	18.20
Aiken	Avondale Mills: Stevens	0080-0001	NO2	220.63
Aiken	Avondale Mills: Swint	0080-0005	NO2	5.77
Aiken	Avondale Mills: Warren	0080-0039	NO2	5.62
Aiken	Avondale Mills: Woodhead	0080-0027	NO2	0.01
Aiken	Bridgestone/Firestone	0080-0114	NO2	10.53
Aiken	Dixie Clay Co	0080-0029	NO2	3.25
Aiken	Grace: National Kaolin	0080-0004	NO2	7.21
Aiken	Kentucky-Tennessee: Langley	0080-0003	NO2	8.02
Aiken	Kimberly-Clark	0080-0009	NO2	150.97
Aiken	Metso USA Inc	0080-0104	NO2	2.19
Aiken	Owens Corning: Aiken	0080-0028	NO2	86.79
Aiken	Satterfield Const Co Inc: Graniteville	9900-0130	NO2	7.48
Aiken	Satterfield Construction: # 1	9900-0046	NO2	13.23
Aiken	SC Pipeline: Warrentonville	0080-0107	NO2	40.87
Aiken	SCE&G: Urquhart	0080-0011	NO2	4,225.68
Aiken	Shaw Industries: Aiken	0080-0101	NO2	10.71
Aiken	Southeastern Clay Co	0080-0030	NO2	4.16
Aiken	UCB Chemicals Corp: Radcure	0080-0088	NO2	9.37
Aiken	Westinghouse: Savannah River Site	0080-0041	NO2	262.93
	<b>1999 Aiken County Total</b>			<b>5,920.74</b>
	<b>Emissions in Nonattainment Area-Total</b>			<b>5,657.81</b>
	<b>Emissions in Nonattainment Area-Percent</b>			<b>95.5%</b>

*SCE&G: Urquhart is subject to the NO<sub>x</sub> SIP Call and has a 2004 ozone season NO<sub>x</sub> budget of 643 tons.*

Table D-2 lists the VOC point sources that are in operation in Aiken County based on the 1999 NO<sub>x</sub> and VOC emissions inventory i-Steps data. The county has 27 VOC point sources in operation and 26 of these point sources are located within the nonattainment area.

Table D-2: Aiken County Point Source VOC Emissions				
County	Plant Name	Permit Number	Pollutant	Point Source-VOC (Tons Per Year)
Aiken	Advanced Glassfiber Yarns	0080-0117	VOC	62.09
Aiken	Avondale Mills: Gregg	0080-0061	VOC	144.16
Aiken	Avondale Mills: Horse Creek	0080-0098	VOC	43.01

Table D-2: Aiken County Point Source VOC Emissions				
County	Plant Name	Permit Number	Pollutant	Point Source-VOC (Tons Per Year)
Aiken	Avondale Mills: Stevens	0080-0001	VOC	26.21
Aiken	Avondale Mills: Swint	0080-0005	VOC	26.51
Aiken	Avondale Mills: Townsend	0080-0006	VOC	7.00
Aiken	Avondale Mills: Warren	0080-0039	VOC	13.89
Aiken	Avondale Mills: Woodhead	0080-0027	VOC	254.19
Aiken	Bridgestone/Firestone	0080-0114	VOC	29.00
Aiken	Charter-Triad Terminals LLC	0080-0051	VOC	39.56
Aiken	Dixie Clay Co	0080-0029	VOC	0.12
Aiken	Grace: National Kaolin	0080-0004	VOC	0.40
Aiken	Kentucky-Tennessee: Langley	0080-0003	VOC	13.94
Aiken	Kimberly-Clark	0080-0009	VOC	79.91
Aiken	Metso USA Inc	0080-0104	VOC	10.78
Aiken	Owens corning: Aiken	0080-0028	VOC	18.21
Aiken	Pactiv Corporation	0080-0057	VOC	255.71
Aiken	Satterfield Const Co Inc: Graniteville	9900-0130	VOC	0.01
Aiken	Satterfield Construction: # 1	9900-0046	VOC	3.50
Aiken	SC Pipeline: Warrentonville	0080-0107	VOC	0.27
Aiken	SCE&G: Urquhart	0080-0011	VOC	16.72
Aiken	Shaw Industries: Aiken	0080-0101	VOC	34.13
Aiken	Southeastern Clay Co	0080-0030	VOC	0.13
Aiken	Three Rivers Solid Waste-Landfill	0080-0112	VOC	1.03
Aiken	TTX-Hamburg	0080-0076	VOC	67.48
Aiken	UCB Chemicals Corp: Radcure	0080-0088	VOC	0.64
Aiken	Westinghouse: Savannah River Site	0080-0041	VOC	22.74
	<b>1999 Aiken Co Total</b>			<b>1,171.34</b>
	<b>Emissions in Nonattainment Area-Total</b>			<b>1,148.6</b>
	<b>Emissions in Nonattainment Area-Percent</b>			<b>98.1%</b>

Table D-3 lists the NO<sub>x</sub> on-road emissions for Aiken County.

Table D- 3: Aiken County On-road NO <sub>x</sub> Emissions			
County	Tier 1	Tier 2	Highway NO <sub>2</sub> (Tons Per Year)
Aiken	11-Highway Vehicles	01-Light-Duty Gas Vehicles & Motorcycles	2,096.00
Aiken	11-Highway Vehicles	02-Light-Duty Gas Trucks	1,154.00
Aiken	11-Highway Vehicles	03-Heavy-Duty Gas Vehicles	303.00
Aiken	11-Highway Vehicles	04-Diesels	2,628.00
	1999 Aiken Co Total		<b>6,181.00</b>

Table D-4 lists the VOC on-road emissions for Aiken County.

<b>Table D-4: Aiken County On-road VOC Emissions</b>			
<b>County</b>	<b>Tier 1</b>	<b>Tier 2</b>	<b>Highway VOC (Tons Per Year)</b>
Aiken	11-Highway Vehicles	01-Light-Duty Gas Vehicles & Motorcycles	2,319.00
Aiken	11-Highway Vehicles	02-Light-Duty Gas Trucks	1,313.00
Aiken	11-Highway Vehicles	03-Heavy-Duty Gas Vehicles	310.00
Aiken	11-Highway Vehicles	04-Diesels	170.00
	<b>Aiken Co Total</b>		<b>4,112.00</b>

## E. Traffic and Commuting Patterns

Estimates of the Daily Vehicle Miles Traveled (DVMT) were obtained from the South Carolina Department of Transportation (SCDOT). SCDOT determines current DVMT by multiplying traffic volume (through traffic counts) and lane miles (determined by the Highway Performance Monitoring System) for each particular area. The South Carolina Department of Public Safety, Division of Motor Vehicles, provided motor vehicle registration data. All other data in this section was obtained from the US Census Bureau. All data is based on the year 2000.

Table E-1 shows that the 2000 and 2025 DVMT data for Aiken County and the Aiken Nonattainment Area.

<b>Table E-1: DVMT for Aiken Nonattainment Area.<sup>5</sup></b>				
<b>County</b>	<b>2001 DVMT</b>	<b>2025 DVMT</b>	<b>DVMT Change (2000-2025)</b>	<b>Projected % Annual Change</b>
Aiken	4,264,957	6,260,607	1,995,650	1.95
Aiken Nonattainment Area Total <sup>6</sup>	2,917,095	5,795,944	2,878,849	4.11
%DVMT Captured Inside Nonattainment Area	68.40	92.58		

Figure 1 shows the Interstates that are located within the Aiken Nonattainment Area. There is one interstate (I-20). I-20 is the major corridor of travel between Aiken and Florence, South Carolina. Additionally, there are four other major routes of travel through Aiken County. They include US Highways 1, 278, 78 and 25. There are also numerous State and secondary roads in the area that connect the larger towns.

<sup>5</sup> Data provided by SCDOT.

<sup>6</sup> Aiken Nonattainment Area Totals based on MPO figures and may reflect an underestimation of the total percent captured by the boundary.

Table E-2<sup>7</sup> presents the breakdown by road classifications of DVMT traveled in the Aiken County from 2000 and projected through 2025.

Table E-2: DVMT Data for Aiken County				
	2000	Projected 2007	Projected 2012	Projected 2025
<b>Aiken County</b>				
Rural Interstate (01)	737,266	781,561	813,200	895,461
Rural Principal Arterial (02)	219,591	240,765	255,890	295,214
Rural Minor Arterial (03)	578,094	633,838	673,655	777,179
Rural Major Collector (04)	514,823	564,466	599,925	692,119
Rural Minor Collector (05)	48,223	52,873	56,194	64,830
Rural Local (09)	265,344	290,931	309,207	356,724
<i>Rural Total</i>	<i>2,363,342</i>	<i>2,564,434</i>	<i>2,708,071</i>	<i>3,081,528</i>
Urban Interstate (11)	271,671	454,155	584,500	923,399
Urban Freeway/Expressway (12)	13,608	14,920	15,857	18,294
Urban Principal Arterial (13)	631,507	692,401	735,897	848,987
Urban Minor Arterial (14)	716,737	785,850	835,216	963,568
Urban Collector (15)	169,183	185,497	197,150	227,447
Urban Local (18)	146,822	160,979	171,092	197,384
<i>Urban Total</i>	<i>1,949,528</i>	<i>2,293,802</i>	<i>2,539,712</i>	<i>3,179,079</i>
<b>Grand Total DVMT</b>	<b>4,312,869</b>	<b>4,858,236</b>	<b>5,247,783</b>	<b>6,260,607</b>

Table E-3<sup>8</sup> presents the 2000 worker flow data from each of the counties. Some counties that are listed on this table are not being considered for boundary recommendations and are being included on this chart to account for all workers in each county. This table shows that approximately 70% of workers that live in Aiken County work inside the county. Approximately 69% of the workers that do not work in Aiken County commute out of state. From the above table it is possible to see that approximately 18% of all workers in Aiken County reside outside of South Carolina.

Table E-3: Where People Work Who Live in SC					
County Worked In	County of Residence				
	Aiken	Other States	Columbia Co., GA	Richmond Co., GA	Grand Total
Grand Total	62,802	781	3,844	5,051	72,478
Abbeville	3				3
Aiken	44,243	781	3,844	5,051	53,919
Allendale	50				50
Anderson	10				10
Bamberg	37				37
Barnwell	912				912
Beaufort	45				45
Berkeley	19				19

<sup>7</sup> Data provided by SCDOT.

<sup>8</sup> Data provided by US Census: 2000.

Table E-3: Where People Work Who Live in SC					
County of Residence					
County Worked In	Aiken	Other States	Columbia Co., GA	Richmond Co. GA	Grand Total
Calhoun	16				16
Charleston	107				107
Colleton	8				8
Columbia Co. GA	1,522				1,522
Darlington	5				5
Dorchester	22				22
Edgefield	1,339				1,339
Fairfield	15				15
Georgetown	36				36
Greenville	39				39
Greenwood	26				26
Kershaw	7				7
Lancaster	3				3
Laurens	21				21
Lee	16				16
Lexington	1,428				1,428
McCormick	25				25
Newberry	31				31
Oconee	11				11
Orangeburg	107				107
Other States	1,027				1,027
Pickens	9				9
Richland	1,073				1,073
Richmond Co. GA	10,262				10,262
Saluda	266				266
Spartanburg	13				13
Sumter	11				11
York	38				38

**Figure E-1: Urban vs. Rural DVMT for Aiken County**

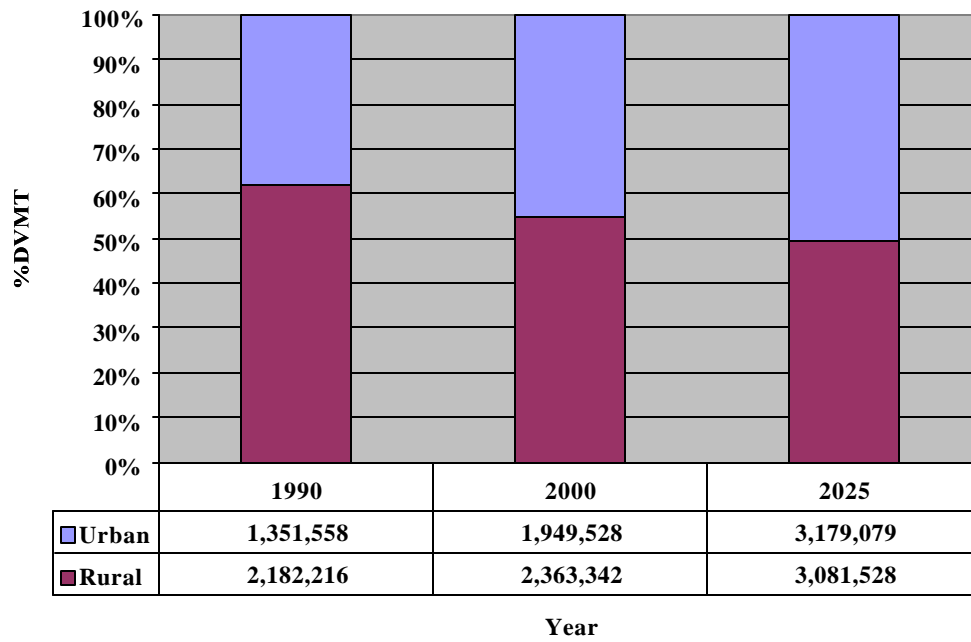


Figure E-1<sup>9</sup> presents urban and rural DVMT driven in Aiken County.

<sup>9</sup> Data provided by US Census: 2000.

**Figure E-2: 2000 Motor Vehicle Registration for Aiken County**

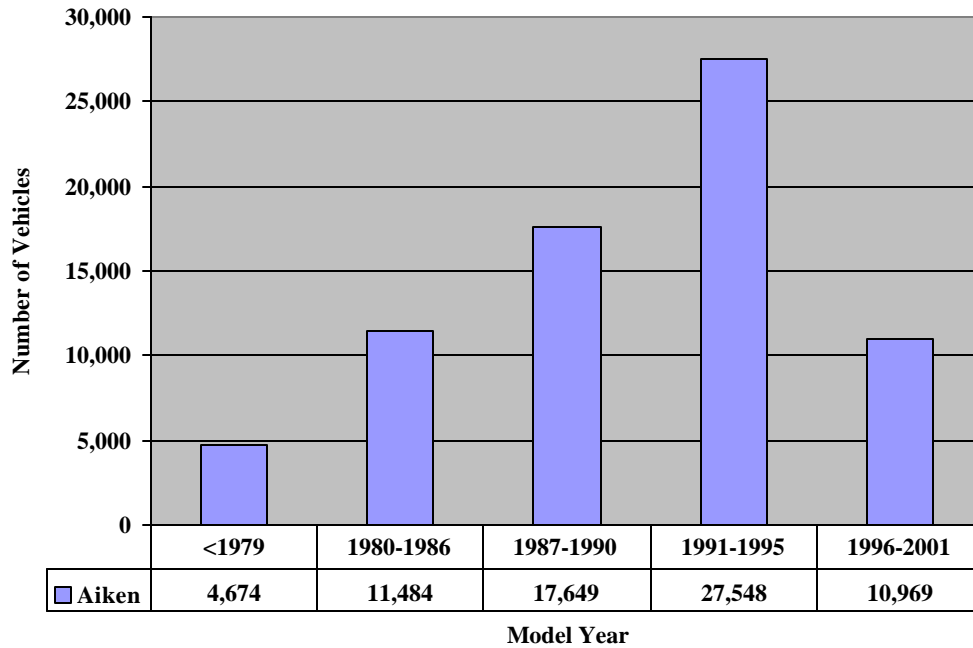


Figure E-2<sup>10</sup> presents the motor vehicle registration data for Aiken County. Only a small portion of the vehicles are pre-1981 model years. In 1981 new cars were outfitted with three-way catalysts, on-board computers, and oxygen sensors to help increase the efficiency of the catalytic converters. This figure shows that the majority of cars registered are model years 1991-1995. In 1991 the EPA established lower tailpipe standards for hydrocarbons and nitrogen oxides beginning with 1994 model year vehicles.

This data reflects 2000 registration figures, and many vehicle owners will elect to replace vehicles with newer vehicles in the coming years. These vehicle turnovers, combined with future national low sulfur fuel standards, the use of Onboard Diagnostic (OBD) systems, and Onboard Refueling Vapor Recovery (ORVR) systems will help to offset any potential impacts from the increased emissions from mobile sources in this area.

#### **F. Expected Growth (Including Extent, Pattern, and Rate of Growth)**

Limited data is available in assessing expected growth for Aiken County, and there is no known data for assessing growth inside the recommended area boundary. Conclusions were drawn based on historical data from 1990, current data from 2000, and population projections for 2020 as contained in Table F-1. Economic growth, relative to population growth, is even harder to predict. No knowledge of major economic expansions is available. While it is certain that population counts will grow, it is only assumed that current economic factors will remain stable or that some economic growth will occur. It is reasonable to expect the majority of that growth to be located inside, or at least near, the Aiken Nonattainment Area boundary.

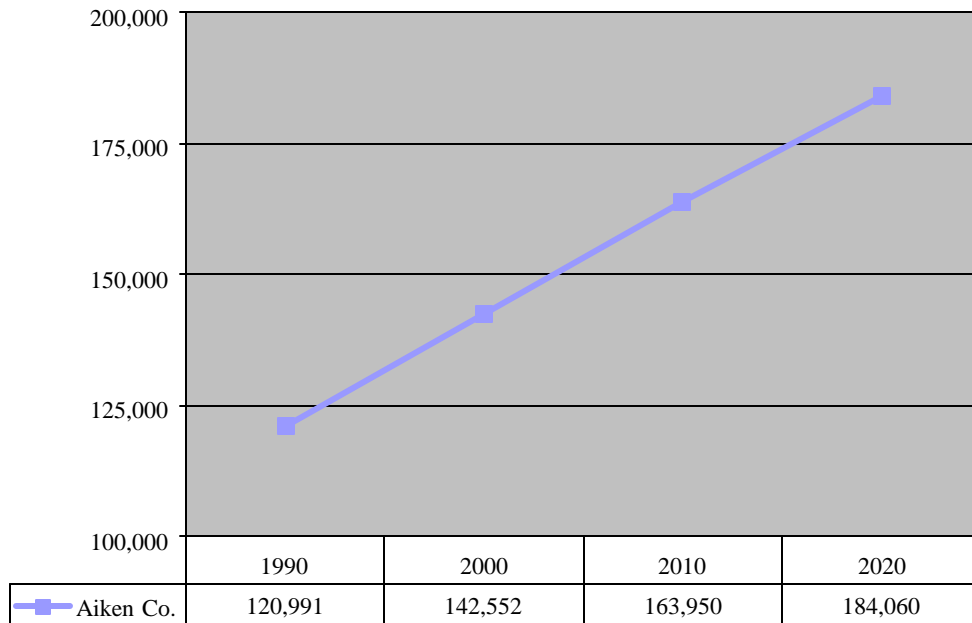
<sup>10</sup> Data provided by SC Department of Public Safety, Division of Motor Vehicles.



**Table F-1:  
Historical and Projected Population and Population Density per County**

	Aiken Co.
Population, 1990 <sup>11</sup>	120,991
Population, 2000 <sup>12</sup>	142,552
Projected Population, 2020 <sup>13</sup>	184,060
Population. Growth Rate, 1990 – 2000 (Persons per 5 Years)	10,780.5
Projected Population Growth Rate, 2000 – 2020 (Persons per 5 Years)	10,377
Land Area (Sq. Miles)	1073
Persons per Sq. Mile, 2000	132.9
Projected Persons per Sq. Mile, 2020	171.6
Urban Population, 2000	86,786
% Urban Population, 2000	60.9%
Rural Population, 2000	55,766
% Rural Population, 2000	39.1%

**Figure F-1:  
Population Growth by County, 1990 - 2020**



<sup>11</sup> Data provided by US Census: 2000.

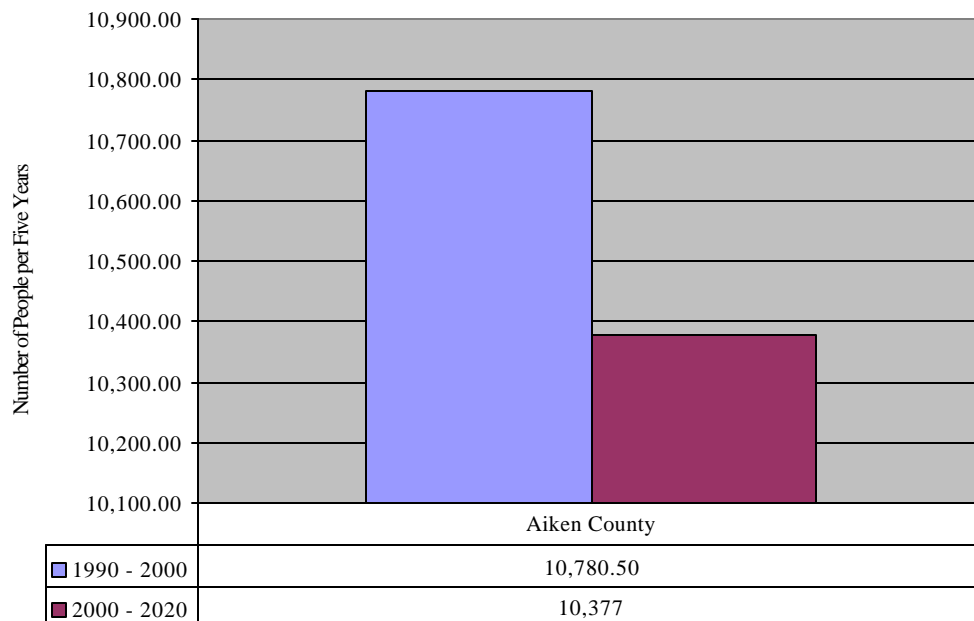
<sup>12</sup> Data provided by US Census: 2000.

<sup>13</sup> Data provided by EPA.

It should be noted that trends are based on projected data for 2020. The population will grow in each county; however, comparing the population increase per five years over the last ten years (1990 – 2000) to the projected population increase per five years over the next twenty years (2000 – 2020) shows that the rate of growth slows for Aiken County. Since the recommended area includes the urbanized portion of Aiken County, it is assumed that the recommended area will encompass the majority of expected population growth.

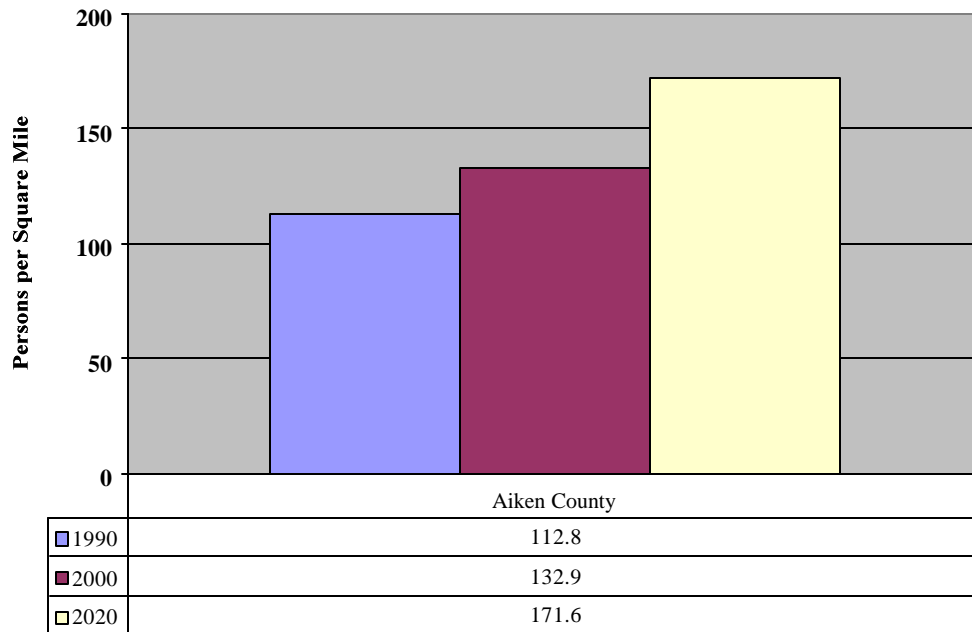
Manufacturing is the largest employment sector in Aiken County.<sup>14</sup> The second and third largest sectors are retail trade and health care and social assistance, respectively.

**Figure F-2**  
**Population Growth, 1990 - 2020**



<sup>14</sup> Data provided by US Census: 2000.

**Figure F-3  
Historical and Projected Population Density**



Figures F-1, F-2, and F-3 show historical and projected data for total population, rate of growth, and population density, respectively, for Aiken County. Since the Aiken Nonattainment Area captures the area's urban population and contains portions of the manufacturing and retail trade, it is reasonable to conclude that the recommended area boundary at least approximates, if not contains, the expected population growth, and hence the economic growth, for the area in the coming years.

### **G. Meteorology**

See Section V - G of Introduction.

### **H. Topography**

See Section V - H of Introduction.

### **I. Jurisdictional Boundaries**

The Aiken Nonattainment Area boundary includes all portions of the Aiken MPO and an additional (contiguous) portion around the Jackson Middle School ozone monitoring site.

Starting point is on the Savannah River at the Georgia - South Carolina State Line on the Aiken - Edgefield County Line.

Follows the Aiken - Edgefield County Line northeast for 18.4 miles to Shaw Creek / Luke Bridge Road (S-1020).

Follows Shaw Creek southwest for 5.0 miles to Boggy Branch.  
 Follows Boggy Creek northeast for 1.7 miles to Hamelin Road (S-1925).  
 Follows Hamelin Road (S-1925) north for 1.7 miles to Reedy Fork Road.  
 Follows Reedy Fork Road east for 1.3 miles to Morris Road (S-1469).  
 Follows Morris Road (S-1469) southeast for 1.1 miles to US 1.  
 Follows US 1 southwest for 0.1 miles to Horned Owl Road.  
 Follows Horned Owl Road southeast for 0.3 miles to Screech Owl Trail.  
 Follows Screech Owl Trail south for 0.6 miles to Barn Owl Road.  
 Follows Barn Owl Road southeast for 0.7 miles to Old Camp Long Road.  
 Follows Old Camp Long Road east and north for 1.7 miles to Little Branch.  
 Follows Little Branch east for 1.0 mile to South Fork Edisto River.  
 Follows South Fork Edisto River south for 0.7 miles to Wire Road (S-49).  
 Follows Wire Road (S-49) west for 1.1 miles to Snipes Pond Road (S-1527).  
 Follows Snipes Pond Road (S-1527) south for 3.9 miles to Cooks Bridge Road (S-29).  
 Follows Cooks Bridge Road (S-29) west for 0.6 miles to Beaver Dam Road (S-207).  
 Follows Beaver Dam Road (S-207) northwest for 0.7 miles to Zane Trace Road.  
 Follows Zane Trace Road southwest for 0.4 miles to Cooks Bridge Road (S-29).  
 Follows Cooks Bridge Road (S-29) west for 1.0 mile to Joyce Branch Road.  
 Follows Joyce Branch Road south for 1.4 miles to New Bridge Road (S-206).  
 Follows New Bridge Road (S-206) west for 0.3 miles to Joyce Branch.  
 Follows Joyce Branch south for 1.2 miles to Redds Branch / Shaws Branch.  
 Follows Redds Branch / Shaws Branch south for 0.5 miles to Wrights Mill Road.  
 Follows Wrights Mill Road south for 1.2 miles to Wagener Road (SC 4 / SC 302).  
 Follows Wagener Road (SC 4 / SC 302) northeast for 0.1 miles to Martin Road (S-1017).  
 Follows Martin Road (S-1017) south for 0.4 miles to Montmorenci Road (S-77).  
 Follows Montmorenci Road (S-77) southwest for 2.7 miles to US 78.  
 Follows US 78 northwest for 0.4 miles to Old Dibble Road (S-507).  
 Follows Old Dibble Road (S-507) southwest for 3.4 miles to Banks Mill Road (S-79).  
 Follows Banks Mill Road (S-79) southeast for 1.0 mile to Talatha Church Road (S-729).  
 Follows Talatha Church Road (S-729) southwest and northwest for 1.9 miles to Crosby Road (S-1755)  
 / Sizemore Road.  
 Follows Crosby Road (S-1755) west for 0.6 miles to Whiskey Road (SC 19) / Woodvine Road.  
 Follows Whiskey Road (SC 19) south to US 278.  
 Follows US 278 southwest to North Silvertown Street (SC 62).  
 Follows North Silvertown Street (SC 62) southwest to Atomic Road (SC 125).  
 Follows Atomic Road (SC 125) northwest to Silver Bluff Road (SC 302).  
 Follows Silver Bluff Road (S-302) southwest for 3.1 miles to Bluff Landing Road.  
 Follows Bluff Landing Road southwest for 1.0 mile to Savannah River.  
 Follows Savannah River northwest for 35.0 miles back to the starting point on the Georgia - South Carolina State Line at the Aiken - Edgefield County Line.

## **J. Level of Control of Emission Sources**

Through its participation with the Early Action Compact, Aiken County is exploring local control strategies such as an air quality contact person to promote air quality awareness, alternative fuels, and low sulfur fuels.

## **K. Regional Emissions Reductions**

See Section V of the Introduction.